REMARKS

Status of the Claims

Claims 1-3, and 32-68 are pending. Claims 4-31, 35, 36, and 56 have been canceled without prejudice or disclaimer of the subject matter claimed therein. Claims 1, 37, 50, 57, 58, 59, and 63 have been amended to clarify the claimed invention. New claims 64-68 have been added. Representative support for the amendments to the claims and the new claim is summarized below.

Claim 37 has been amended to remove a limitation already present in dependent claim 38.

Claims 57 and 63 have been amended for consistency in the format with the other claims.

Representative support for the amendment to claims 1, 50, 58, and 59 can be found on page 21, lines 1-4.

Representative support for new claim 64 is found in claim 1.

Representative support for new claim 65 is found in claim 46.

Representative support for new claim 66 is found in claim 47.

Representative support for new claim 67 is found in original claim 48.

Representative support for new claim 68 is found in original claim 49.

The amendments to the claims do not add prohibited new matter.

Objection to the Specification

In response to the objection, Applicants submit a Sequence Listing in compliance with the requirements of Sequence Rules and Regulations (37 CFR 1.821-1.825). Additionally, the Brief Description of Figure 3 has been amended to reference the sequence identifier for the disclosed sequence.

Rejection Under 35 U.S.C. § 112, First Paragraph

Claims 3, 46-49, 53-55, and 62 are rejected under 35 U.S.C. § 112, first paragraph, because the specification while being enabling for a pharmaceutical composition comprising synthetic fibrils, does not reasonably provide enablement for vaccine composition comprising amyloid fibrils.

Applicants respectfully point out that the initial burden is on the Examiner to provide a reasonable explanation as to why the scope of protection provided by the claim is not adequately enabled by the disclosure. *In re Wright*, 999 F.2d 1557, 1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). Moreover, the court in *In re Marzocchi* stated that it is incumbent upon the Patent Office to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The Office Action has not provided any reasons to doubt the enablement of the claimed invention. Moreover, the Office Action has not provided a reasonable explanation or evidence establishing the nonenablement of the claims.

In the absence of evidence to the contrary, the specification fully enables the claims directed to vaccine compositions comprising amyloid fibrils. Many vaccines have been developed for treating diseases. As discussed below, Applicants have considered the claimed invention in view of the Wands factors set forth in the Office Action.

1. The breadth of the claims: The Office Action alleges that the claimed subject matter is not adequately described or demonstrated by the specification. The claims are directed to vaccine compositions comprising amyloid fibrils. Vaccine compositions comprising amyloid fibrils are sufficiently described and disclosed in the specification. For example, paragraphs 0073 to 0089 and 0128-0133 teach how to make and use vaccine compositions. The specification enables the breadth of the claims.

2. The absence and presence of working examples: The Office Action asserts that the specification has not demonstrated that compositions comprising amyloid fibrils can be used as a vaccine to prevent a disease. The specification provides representative working examples of vaccine compositions in paragraphs 0073 to 0089 and 0128 to 0133.

The Office Action states that vaccine is defined as a suspension of weakened, killed or fragmented microorganisms or toxins or of antibodies or lymphocytes that is administered primarily to prevent disease. Applicants respectfully submit that the term "vaccine" encompasses any preparation of antigens that induce formation of antibodies or immunity against an undesirable agent that causes a disease. As set forth in the response to the previous Office Action, the rabies vaccine is an example of a vaccine that is used after a subject has been exposed to the agent. It is

not administered until the subject is in contact with the rabies virus. Vaccines are not limited to formulations that prevent diseases because they also include formulations that treat diseases such as cancer vaccines. The presently claimed vaccine compositions comprising amyloid fibrils have been shown to remove undesirable amyloid deposits from mice (see Example D, page 35 of the specification; and attached reference Hrncic *et al.* (2001) Vaccine-based therapy for primary (AL) amyloidosis. Amyloid and Amyloidosis 2001. Miklos Bely and Agnes Apathy Eds. Agnes Apathy Publishing, Budapest, pp.234-235).

3. The state of the prior art and the predictability and unpredictability of the art: The prior art discloses that vaccines are commonly used to immunize a subject against a specific agent that causes a disease before or after the subject has been in contact with the agent. As discussed earlier, many vaccines have been developed for treating diseases. Some examples include polio, rubeola (measles), Hepatitis B, influenzae, and tetanus-diphtheria.

Vaccines are being developed for treating neurodegenerative diseases such as Alzheimers disease (see attached Lambert *et al.* and press releases from Neurochem). Moreover, Hrncic *et al.* shows that amyloid fibrils can be developed into vaccines to treat systemic amyloidosis) (see Hrncic *et al.* 2001, attached).

Although vaccines comprising amyloid fibrils were not disclosed at the time the invention was made, amyloid fibrils were routinely prepared and used by person having ordinary skill in the art. Given the teachings of the specification and the state of the prior art in the vaccine field, a person having ordinary skill in the art would be able to prepare vaccines comprising amyloid fibrils.

In summary, vaccines have been prepared for inducing immunity against agents causing diseases, and amyloid fibrils are routinely prepared and used by a person having ordinary skill in the art. The specification confirms the predictability of vaccines comprising amyloid fibrils for removing amyloid deposits (see for example, paragraphs 0128-0133). The Patent Office has not established that vaccines comprising amyloid fibrils are unpredictable. The Patent Office has the burden of establishing the unpredictability of vaccines comprising amyloid fibrils. *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

4. The amount of direction or guidance presented and the quantity of experimentation necessary: The specification teaches how to make and use vaccine compositions comprising

amyloid fibrils for removing amyloid deposits. For example, in paragraphs 0128-0133, the specification teaches how to make vaccine compositions comprising amyloid fibrils and how to use of the composition to remove amyloid deposits from mice. The specification provides sufficient guidance to enable the claimed invention.

5. Nature of the invention: The Office Action alleges that the specification has not demonstrated the protective effects of a composition comprising amyloid fibrils. Applicants respectfully point out that paragraphs 0128-0133 demonstrate that amyloid fibrils injected into mice are able to remove amyloid deposits in mice. This Example (paragraphs 0128-0133) establishes the effectiveness of amyloid fibrils in protecting mice from amyloidosis.

In view of the discussion above, the specification enables the claimed invention.

Rejections Under 35 U.S.C. § 102

Claims 1, 2, 32-45, 50-52, 56-61, and 63 are rejected under 35 U.S.C. § 102(e) as being anticipated by Schenk (U.S. Patent 6,875,434).

Claims 1, 32-45, 56, 57, and 59 are rejected under 35 U.S.C. § 102(a) as being anticipated by Schenk (WO 99/27944).

Claims 1, 2, 32-45, 50-52, 56-58 and 63 as they stand are directed to methods of removing amyloid deposits from a subject comprising administering "amyloid fibrils heterologous to the amyloid fibrils in the subject." Claims 59-61 and new claims 64-68 are directed to pharmaceutical compositions formulated to remove amyloid deposits from a subject comprising amyloid fibrils heterologous to the amyloid fibrils in the subject. The amyloid fibrils used in the present invention are different from those of the subject being treated. As an example, Example D on page 35 of the specification shows the use of light chain fibrils to treat AA-amyloidosis which is characterized by serum amyloid A (SAA) protein. The claims are directed to the use of amyloid fibrils that are of a different type than those in the subject being treated.

In contrast, the cited references of Schenk are directed to treating Alzheimer's disease using ∃-amyloid peptides or aggregates that are homologous to or of the same type as those peptides or aggregates found in the amyloid deposits of an Alzheimer's patient. As is well known, Alzheimer's disease is characterized by amyloid deposits containing primarily ∃-amyloid peptides.

The references of Schenk *et al.* neither disclose nor contemplate using "heterologous amyloid fibrils," such as light chain fibrils, to treat Alzheimer patients. Moreover, the presently claimed pharmaceutical compositions are formulated to comprise amyloid fibrils that are different from those found in the subject being treated. Accordingly, the references of Schenk do not anticipate the claimed invention.

CONCLUSION

In view of the foregoing claim amendments and accompanying remarks, Applicants respectfully request reconsideration and timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants' undersigned representative to expedite prosecution.

If there are any additional fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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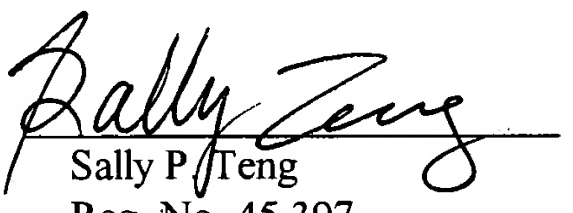
By: 
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